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7.4 HW

p 368

13-17, 21-27, 31-35

ODDS

$$\begin{array}{r}
 13. \quad \underline{3} \mid 1 \quad -8 \quad 6 \\
 \quad \quad \quad 3 \quad -15 \\
 \hline
 \quad \quad 1 \quad -5 \mid (-9)
 \end{array}$$

$$\begin{array}{r}
 \underline{-4} \mid 1 \quad -8 \quad 6 \\
 \quad \quad \quad -4 \quad 48 \\
 \hline
 \quad \quad 1 \quad -12 \mid (54)
 \end{array}$$

$$\begin{array}{r}
 15. \quad \underline{3} \mid 1 \quad 0 \quad -5 \quad 2 \\
 \quad \quad \quad 3 \quad 9 \quad 12 \\
 \hline
 \quad \quad 1 \quad 3 \quad 4 \mid (14)
 \end{array}$$

$$\begin{array}{r}
 \underline{-4} \mid 1 \quad 0 \quad -5 \quad 2 \\
 \quad \quad \quad -4 \quad 16 \quad -44 \\
 \hline
 \quad \quad 1 \quad -4 \quad 11 \mid (-42)
 \end{array}$$

$$\begin{array}{r}
 17. \quad \underline{3} \mid 2 \quad -8 \quad -2 \quad 5 \\
 \quad \quad \quad 6 \quad -6 \quad -24 \\
 \hline
 \quad \quad 2 \quad -2 \quad -8 \mid (-19)
 \end{array}$$

$$\begin{array}{r}
 \underline{-4} \mid 2 \quad -8 \quad -2 \quad 5 \\
 \quad \quad \quad -8 \quad 64 \quad -248 \\
 \hline
 \quad \quad 2 \quad -16 \quad 62 \mid (-243)
 \end{array}$$

$$\begin{array}{r}
 21. \quad \underline{1} \mid 1 \quad 2 \quad -1 \quad -2 \\
 \quad \quad \quad 1 \quad 3 \quad 2 \\
 \hline
 \quad \quad 1 \quad 3 \quad 2 \mid 0
 \end{array}$$

$$(x-1)(x^2+3x+2)=0$$

$$(x-1)(x+1)(x+2)=0$$

$$\{1, -1, -2\}$$

$$\begin{array}{r}
 23. \quad \underline{-4} \mid 1 \quad 1 \quad -16 \quad -16 \\
 \quad \quad \quad -4 \quad 12 \quad 16 \\
 \hline
 \quad \quad 1 \quad -3 \quad -4 \mid 0
 \end{array}$$

$$(x+4)(x^2-3x-4)=0$$

$$(x+4)(x-4)(x+1)=0$$

$$\{-4, 4, -1\}$$

$$\begin{array}{r}
 25. \quad \underline{5} \mid 2 \quad -5 \quad -28 \quad 15 \\
 \quad \quad \quad 10 \quad 25 \quad -15 \\
 \hline
 \quad \quad 2 \quad 5 \quad -3 \mid 0
 \end{array}$$

$$(x-5)(2x^2+5x-3)=0$$

$$(x-5)(2x-1)(x+3)=0$$

$$\{5, \frac{1}{2}, -3\}$$

$$\begin{array}{r}
 27. \quad \underline{-\frac{1}{2}} \mid 2 \quad 7 \quad -53 \quad -28 \\
 \quad \quad \quad -1 \quad -3 \quad 28 \\
 \hline
 \quad \quad 2 \quad 6 \quad -56 \mid 0
 \end{array}$$

$$(2x+1)(2x^2+6x-56)=0$$

$$(2x+1)(x^2+3x-28)=0$$

$$(2x+1)(x+7)(x-4)=0$$

$$\{-\frac{1}{2}, -7, 4\}$$

$$31. \begin{array}{r|rrrr} 2 & 1 & 0 & -3 & 0 & -4 \\ & & 2 & 4 & 2 & 4 \\ \hline & 1 & 2 & 1 & 2 & 0 \end{array}$$

$$(x-2)(x^3+2x^2+x+2)=0$$

$$x^2(x+2)+1(x+2)$$

$$(x-2)(x+2)(x^2+1)=0$$

$$\{2, -2, \pm i\}$$

$$33. \begin{array}{r|rr} 1 & 1 & -1 & k \\ & & 1 & 0 \\ \hline & 1 & 0 & (k=3) \end{array}$$

$$35. \begin{array}{r|rr} -k & 1 & 5 & 7 \\ & & -k & -5k+k^2 \\ \hline & 1 & 5-k & \end{array}$$

$$k^2-5k+7=3$$

$$k^2-5k+4=0$$

$$(k-4)(k-1)=0$$

$$(k=4 \quad k=1)$$